# **MEAP**

### Michigan Educational Assessment Program

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8th Grade

Released: Summer 2001

#### MICHIGAN STATE BOARD OF EDUCATION STATEMENT OF ASSURANCE OF COMPLIANCE WITH FEDERAL LAW

The Michigan State Board of Education complies with all Federal laws and regulations prohibiting discrimination and with all requirements and regulations of the U.S. Department of Education. It is the policy of the Michigan State Board of Education that no person on the basis of race, color, religion, national origin or ancestry, age, sex, marital status, or handicap shall be discriminated against, excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination in any program or activity for which it is responsible or for which it receives financial assistance from the U.S. Department of Education.

#### **The Model MEAP Science Tests**

#### **Test Items**

MEAP has provided models of the new science test for the 5<sup>th</sup>, 8<sup>th</sup>, and 11<sup>th</sup> grade. These models present examples of the new science test items. By new, all science test items administered after January 1, 2002 will be aligned to the benchmarks within the Michigan Science Curriculum Framework (MSCF, Summer, 2000). The MSCF is available for you to download from this website: cdp.mde.state.mi.us/Science.

The MEAP science test will be composed of (a) independent multiple-choice items, and (b) clusters of 3 multiple-choice items and 1 constructed-response item. All multiple-choice items are worth 1 point, a constructed-response item (i.e. a short written answer) is worth either 3 or 4 points. The 4-point constructed-response items apply to the text-criticism and investigation clusters.

An answer key follows the test items in the model tests. The answer key provides the answers for the multiple-choice items and the point-scoring guide for the constructed-response items. Also listed for each item is its corresponding MSCF benchmark.

#### The New MEAP Science Test Format

The new 8<sup>th</sup>-grade science test will have 53 items for 75 points. Included among the items are 10 clusters, 2 each for earth, life, and physical science, along with 2 integrated clusters (i.e. 2 science subjects covered in a single cluster), a text-criticism cluster, and an investigation cluster. The test also has 13 independent multiple-choice items.

The model of the 8<sup>th</sup>-grade test is **not complete**. Examples of the integrated clusters were unavailable for the 8<sup>th</sup>-grade model. The new science test item bank did not have enough of these cluster types to prepare **this model**. (Enough clusters of all types are available to prepare the 2002 MEAP science tests, however.) More test items are now being developed to supply the item bank with all cluster types. Waiting for the next batch of items in order to have complete models would have delayed access to the examples of the science test items.

Also note, the arrangement of items in the model tests do **not** necessarily replicate the final printed format of an actual MEAP Science test in regard to item, cluster, or subject sequence. The test format plans are still in progress.

# PART 1 DIRECTIONS

In this test you will demonstrate your understanding of science.

You will have at least 50 minutes to complete this part of the test.

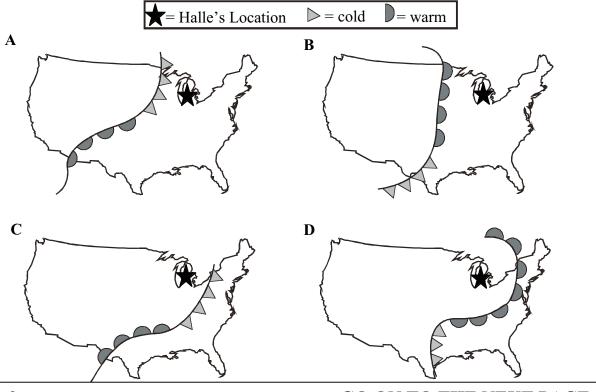
This test includes both multiple-choice and written-response questions. For the multiple-choice questions, use only a **No. 2 pencil** to mark your answers. Make a dark mark that completely fills the corresponding oval **in your ANSWER BOOKLET**. If you are not sure of the answer to a multiple-choice question, mark your **BEST** choice and go on to the next question. If you change an answer, be sure to erase the first mark completely. Remember, mark only **one** answer for each question.

Following a series of multiple-choice items are constructed-response questions that require a written response. These questions require you to write sentences or paragraphs in your ANSWER BOOKLET. Try to show all that you know about the topics by writing as much as you can in response to the questions you are asked. Make sure you at least attempt to answer each question. Record your written responses in the ANSWER BOOKLET on the lines or spaces provided. Make sure the number of the question corresponds to the number in the ANSWER BOOKLET.

If you do not understand any of these directions, please raise your hand.

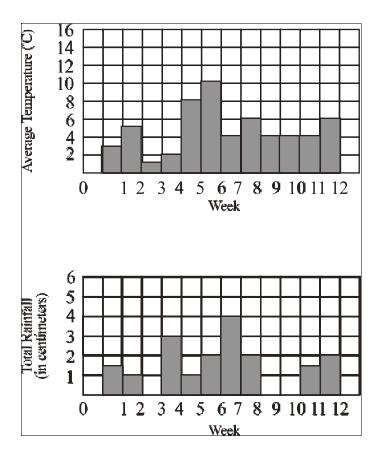
Note: You may use your Lens Investigation Student Journal to answer questions 25 through 28.

- 1. Elizabeth collects different types of rocks whenever she goes on vacation. She has rocks that contain shiny crystals, grainy rocks, and rocks that are smooth. These rocks are formed by different processes. Which of the following is NOT a process by which rocks are formed?
  - A freezing of sediments
  - **B** compaction of sediments
  - **C** heat and pressure within Earth
  - **D** cooling of magma at Earth's surface
- 2. Halle watches the weather forecast to determine how many lawns she will be able to cut that week. The weather person shows a map, which indicates that a cold front is coming in. Which of the following maps shows a cold front coming towards Halle's location?



- **3.** Susan sees smoke coming from the mower's engine. She knows that the unpleasant odor might spread throughout the air in her neighborhood. Why would the odor of the smoke spread?
  - **A** because it is a form of runoff
  - **B** because it is a form of water vapor
  - C because smoke causes condensation in the air
  - **D** because the particles are being carried by the air movement
- **4.** Which one of the following statements about eclipses is true?
  - **A** An eclipse may last as long as five days.
  - **B** An eclipse will always occur during a meteor shower.
  - C During a lunar eclipse the moon passes between Earth and the sun.
  - **D** During a solar eclipse the moon passes between Earth and the sun.

For the past twelve weeks, Mr. Lee's Science class has been recording the weather conditions. They have recorded their findings in the following two charts:



Refer to the text and charts above to answer questions 5 through 8.

5. A class across the state recorded temperature and rainfall for the exact same weeks as Mr. Lee's class. They got different readings than Mr. Lee's class. Which of the following would **NOT** contribute to the difference in the readings?

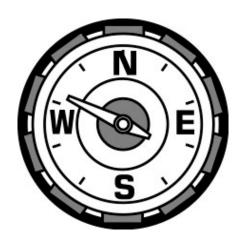
- **A** The class across town has more forestation.
- **B** The class across town is at a higher altitude.
- C The class across town is next to a large lake.
- **D** The class across town had a different recording chart.
- **6.** During which weeks did a cold front **MOST LIKELY** collide with an existing warm air mass?
  - A between weeks 3 and 4
  - **B** between weeks 6 and 7
  - C between weeks 8 and 9
  - **D** between weeks 9 and 10
- 7. Tekia and Scott were in charge of measuring rainfall. Tekia checked the rainfall level one morning as soon as it had stopped raining. Scott checked it again, later that day. He got a lower reading than Tekia. What MOST LIKELY caused the difference in the readings?
  - **A** run-off
  - **B** humidity
  - **C** evaporation
  - **D** cloud cover

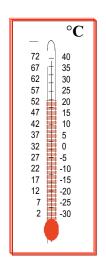
# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

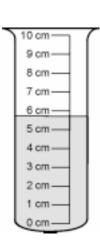
#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

#### (3 points)

**8.** The class used many different instruments to take weather readings. Look at the following instruments:







• Describe wind direction, temperature and precipitation as indicated by these instruments.

Robbie has a rock collection. He has collected rocks from many different places.



#### Refer to the text and picture above to answer questions 9 through 12.

- **9.** Robbie is trying to learn as much about the rock as he can. This particular rock contains some fossils. What can Robbie learn from the fossils?
  - **A** the mass of the rock
  - **B** the relative age of the rock
  - **C** whether or not the rock can float
  - **D** whether the rock is a compound or an element

**10.** Robbie found the rock in a stream. The rock was smooth and round. What **MOST LIKELY** caused this to happen?

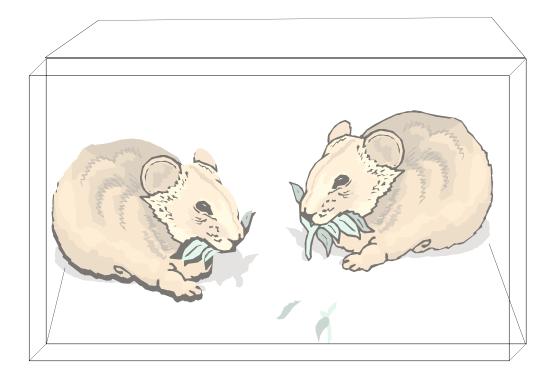
- A cold winters
- **B** the summer sun
- **C** weathering by water
- **D** Earth's magnetic poles
- **11.** Some rocks are formed by heat and pressure. What is the heat source for rock formation?
  - **A** heat from the sun
  - **B** heat from forest fires
  - **C** heat from Earth's interior
  - **D** heat from electrical currents

# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

#### (3 points)

- 12. Over time, rocks begin to break down to form soil.
  - Explain a way living organisms break down rocks.
  - Explain **two** other ways that rocks can be broken down without using living things.



Two hamsters live in a cage in Tom's science classroom. One is a male and the other is a female. Tom has recently discovered that the female is going to have babies.

### Refer to the text and picture above to answer questions 13 through 16.

- **13.** Which types of cell(s) store the genetic information that is passed on to the baby hamsters?
  - A egg cells only
  - **B** sperm cells only
  - **C** egg and sperm cells
  - **D** blood cells and muscle cells

**14.** Suppose the mother hamster has identical twins. One twin is fed grain and seeds, the other is fed processed hamster food. Over time the hamster twins begin to look different. What caused the difference in the characteristics that they show?

- A natural selection
- **B** controlled breeding
- **C** inherited different traits
- **D** environmental differences
- 15. Tom is going to buy two hamsters. He wants to breed them and sell the baby hamsters to a local pet store. The storeowner tells him that his customers prefer dark brown hamsters with white bellies, long fur, black eyes, and long tails. Tom found a female hamster with all of those characteristics. Which male hamster should Tom buy in order to have the **BEST** chance of breeding baby hamsters with **MOST** of those characteristics?

#### **Male Hamsters**

Hamster A	Hamster B	Hamster C	Hamster D
Tan Fur	Dark Brown Fur	Tan Fur	Dark Brown Fur
White Belly	White Belly	White Belly	Dark Brown Belly
Long Fur	Long Fur	Short Fur	Long Fur
Long Tail	Long Tail	Long Tail	Short Tail
Brown Eyes	Brown Eyes	Black Eyes	Black Eyes

- A Hamster A
- **B** Hamster B
- C Hamster C
- **D** Hamster D

# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

#### (3 points)

**16.** Tom's friend Shawna had two hamsters, but they escaped from their cage. Look at the descriptions of her two hamsters below.

#### **Hamster Traits**

Hamster #1	Hamster #2
Thick, black fur	Thin, tan fur
Small ears	Large ears
Brown eyes	Black eyes
Long whiskers	Short whiskers
Short Tail	Long Tail

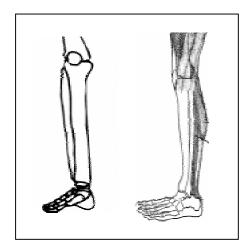
- Which hamster has the **BEST** chance for surviving cooler temperatures?
- Explain why, using at least **two** traits.



Mindy has been training to run in a marathon. She often takes her dog Rusty with her when she goes running. Finally, race day arrives and Mindy registers for the race.

Refer to the text and picture above to answer questions 17 through 20.

- 17. Mindy is given a cup of water as she passes the eight-mile marker. What is the MOST important reason for Mindy to drink water during the race?
  - **A** to reduce her heart rate
  - **B** to replace fluids lost by sweating
  - C to prevent her body from sweating
  - **D** to increase her body temperature



- **18.** Mindy began the marathon at the sound of the buzzer. How do Mindy's skeletal and muscular systems work together to help her run?
  - **A** The muscles provide support for the bones and the bones transport oxygen.
  - **B** The muscles help transport nutrients to the bones and joints.
  - **C** The bones transport energy to the muscles to help her run faster.
  - **D** The skeleton provides support and the muscles move the bones.
- **19.** A man washing his car accidentally sprays Mindy with the hose as she runs by. Which body system lets Mindy know the temperature of the water?
  - **A** her skeletal system
  - **B** her nervous system
  - **C** her digestive system
  - **D** her muscular system

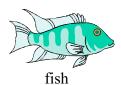
# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

### (3 points)

- **20.** After the race, Mindy eats a large meal. Mindy's body needs and uses the nutrients from the meal.
  - Name **two** body systems involved in obtaining nutrients from the food that Mindy eats.
  - Describe the primary function of each system.









- **21.** What is the classification of the above animals?
  - A producers
  - B egg-layers
  - **C** vertebrates
  - **D** warm-blooded
- 22. Plants use carbon dioxide for which of the following processes?
  - A circulation
  - **B** movement
  - **C** waste disposal
  - **D** food production

- **23.** John and his mother have blue eyes. His brother, sister, and father all have brown eyes. John is often told that he "has his mother's eyes." How can this trait be characterized?
  - A acquired
  - **B** inherited
  - **C** adaptation
  - **D** environmental

- **24.** Which of the following relationships is parasitic in nature?
  - A a flea feeding on a dog
  - **B** a fish cleaning worms from a shark
  - C two buzzards fighting over a dead animal
  - **D** a ladybug eating the aphids (insects) on a plant

SECTION 5 Investigation

### **DIRECTIONS**

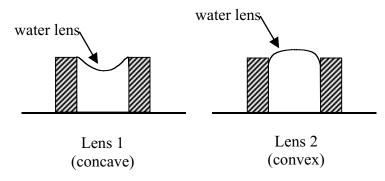
PLEASE TAKE OUT YOUR LENS INVESTIGATION JOURNAL.

USE IT TO HELP YOU ANSWER THE FOLLOWING QUESTIONS.

Note: This model test uses 4 science investigation items from the 2000 middle school MEAP Science Test. The teacher manual and student journal for this investigation are on the Merit Award website: <a href="www.meritaward.state.mi.us">www.meritaward.state.mi.us</a>. Though the constructed-response item for the investigation in the model test is worth 2 points, the constructed-response items for the new science test will be worth 4 points.

SECTION 5 Investigation

We made a lens scenario that looked like the pictures below. Refer to the following diagram for questions 25, 26, 27, and 28. You may use your Lens Investigation Report Form to help you answer these questions.



- **25.** Why does the water lens affect the image seen through it?
  - **A** The water lens emits light.
  - **B** The water lens refracts light.
  - **C** The water lens reflects light.
  - **D** The water lens absorbs light.
- **26.** One group of students performed the investigation and concluded that the shape of a lens affects the size of the image seen. Is this a valid conclusion?
  - **A** Yes, because lens 2 makes the image smaller.
  - **B** No, because lens 1 transmits light.
  - C Yes, because lens 2 made the image larger.
  - **D** No, because lens 1 can only magnify an image.

SECTION 5 Investigation

- **27.** Which of the following is **MOST** similar to lens 2?
  - A a mirror
  - **B** a prism
  - **C** a glass of water
  - **D** a magnifying lens

## ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

#### (2 points)

- **28.** Your teacher has given your class an assignment to find out how the distance of a lens from an object affects the size of the image. She has given you a glass lens and an object.
  - Write the step-by-step procedures for this investigation.

(\*Note: In the new MEAP Test, all constructed-response items in an investigation cluster will be worth 4 points.)

# PART 2 DIRECTIONS

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If you do not understand any of these directions, please raise your hand.

Note: You may now begin Part 2 by reading an article and answering a series of questions about it.

#### Read the article below and answer questions 29 through 32.

#### **How Bats Navigate In The Dark**

Several centuries ago, it was believed that bats somehow saw with their intricate ears, using a mysterious "sixth sense." In the 1700s, Lazarro Spallanzani found that bats could fly in total darkness, while owls could not. He also found that if he covered the head of a bat, it could not navigate.

In the late 1800s, Charles Jurine, of Switzerland, learned that bats use their ears for guidance. In the 1930s at Harvard, D. R. Griffin discovered that bats use high frequency sounds to navigate. We now know that this navigation is actually a type of sonar called echolocation (echoes locating objects).

Bats produce sounds, that cannot be heard by the human ear. These high-pitched noises echo off objects and are heard by the bats allowing them to know what is ahead. Echolocation, echoes locating objects, enables bats to avoid obstacles, determine the size of objects, and even follow an insect or moth. Bats, along with porpoises and some birds, use this method to accurately locate objects.

Moths often become dinners of hungry bats. Some moths have developed a unique defense: they have the ability to make bat-like sounds that bats hear. The bat continues on, leaving the moth alone, believing the object is just another bat instead of something tasty. Score one for the moth.

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- **29.** In which type of area would bats be the **LEAST** able to use echoes to find their way?
  - **A** in a dense forest
  - **B** in a completely dark room
  - **C** in an area with many insects
  - **D** in an open space with no objects

30. Which of the following diagrams illustrates a bat's use of echolocation to locate prey?

A

Echoes Key

sound going out returning

**31.** According to the article, some species of moths have "developed a unique defense" characteristic of sounding like a bat and therefore fooling a bat's sense of echolocation. What is this defense characteristic an example of?

- A sonar
- **B** parasitism
- C succession
- **D** adaptation

# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

#### (4 points)

- **32.** A bat has made a home in the attic of a house. It enters and leaves through the attic opening.
  - Describe in detail how it might use echoes to find its home.
  - Describe how the bat uses echoes to determine how close it is to the attic.

#### **Note:**

This test-model draft does not include 2 integrated science clusters (8 items) at this time. Such items remain in production.

Mimi's family recently bought a new television. Mimi's brother Garth asks a lot of questions about how the sounds and images are transmitted. At school Mimi learned about how light and sound travel. She tries to answer some of his questions.



Refer to the text and picture above to answer questions 41 through 44.

**41.** Mimi is able to see the image from the television reflecting off the surface of a mirror. Why can't she see it reflect off the surface of a sheet of newspaper?

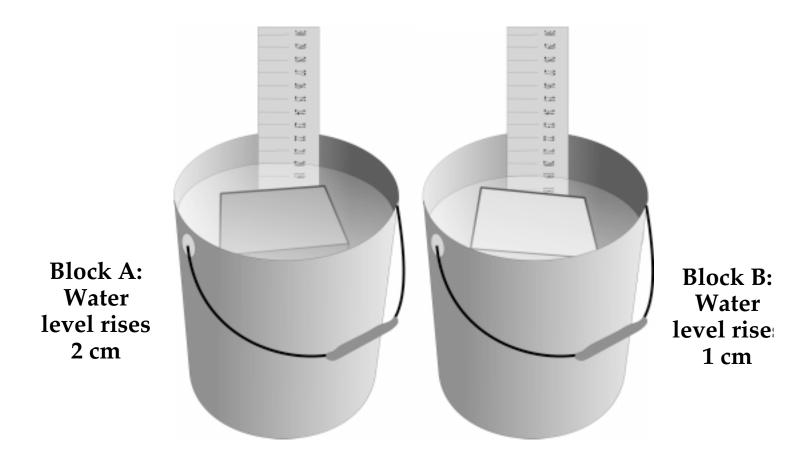
- **A** The mirror is thicker than the sheet of paper.
- **B** The mirror is translucent and the sheet of paper is transparent.
- C Light waves travel through the sheet of paper, but not the mirror.
- **D** The mirror reflects the light and the sheet of paper scatters the light.
- **42.** Garth asks Mimi if there is a way to reduce the number of echoes in the room with the television. What could Mimi do to this room to reduce the number of echoes?
  - **A** Close the door to the room.
  - **B** Turn the television's sound up.
  - C Hang curtains on the walls of the room.
  - **D** Remove the wallpaper from the walls of the room.
- **43.** Garth wears glasses when he watches television. How do the lenses in Garth's glass affect the light?
  - A They refract light.
  - **B** They reflect light.
  - C They emit light.
  - **D** They absorb light.

# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

### (3 points)

- **44.** Mimi tries to explain to Garth how different materials affect how we see light.
  - Give an example of a material that reflects light, one that scatters light, and one that refracts light.



Mary has two blocks. She wants to compare the mass and volume of both, so she places them in identical buckets filled with the same volume of water. Each block sinks slowly, and the picture above shows them as they are about to sink. She measures the change in water level with rulers.

Refer to the text and picture above to answer questions 45 through 48.

- **45.** Mary infers that block A has more mass. Why might she be mistaken?
  - A Block A might have less density than water.
  - **B** Mary must first determine the length of block B.
  - C An object's mass can be determined only if its density is known.
  - **D** The difference in water levels may be the result of different volumes.
- **46.** If block B sinks to the bottom of its bucket and block A does not, which of the following must be **TRUE**?
  - A Block B has greater density and block A has greater mass.
  - **B** Block B has greater volume and block A has greater mass.
  - C Block B has greater density and block A has greater volume.
  - **D** Block B has greater volume and block A has greater density.
- **47.** Mary's friend observes the investigation and claims that block B has more mass. If there were no errors in the investigation, which of the following must be **TRUE** for this claim to be correct?
  - **A** Block B must be larger than block A.
  - **B** Block B must be longer than block A.
  - C Block B must have more volume than block A.
  - **D** Block B must have greater density than block A.

# ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER BOOKLET

#### NOTHING WRITTEN IN THE SPACE BELOW WILL BE SCORED.

### (3 points)

- **48.** Mary's investigation does not produce very precise measurements or accurate results.
  - Identify 2 ways she can redo her experiment to increase precision or accuracy.
  - Explain one of your answers.

- **49.** Ali is using a thermometer to determine the temperature of water in a pond in Michigan. Which of the following is **MOST LIKELY** a measure of the pond's temperature during the late summer?
  - $\mathbf{A}$  0°C
  - **B** 5°C
  - **C** 25°C
  - **D** 75°C
- **50.** Ramon's mother gives him an ice cream cone after dinner. When he goes outside to eat it, the ice cream begins to melt very quickly. Which of the following describes what is happening to his ice cream?



- **A** A physical change is taking place.
- **B** A chemical change is taking place.
- C A change in solubility is taking place.
- **D** A change in conductivity is taking place.

- **51.** Mixtures are very different from compounds. Mixtures can be physically separated into different components and compounds cannot be physically separated. Which of the following is **NOT** a mixture?
  - A air
  - **B** soil
  - C sugar
  - **D** saltwater
- **52.** Chad and Gretchen bought a video game system. They brought it home and plugged it in, but it does not work. Chad's mother thinks she can fix the problem. What should she do first to make sure she does **NOT** get shocked?
  - **A** test the circuits in the system
  - **B** unplug the system from the wall
  - **C** disconnect the ground wire
  - **D** make sure the system is plugged into a socket

- **53.** Paul's science teacher once told him that "What goes up must come down." What force causes objects that go up to come back down?
  - A Earth's orbit of the sun
  - **B** Earth's frictional surface
  - **C** Earth's gravitational pull
  - **D** Earth's magnetic attraction

### Scoring Key Middle School MEAP Model Science Test

Item	Answer	MSCF* Code	Note
1	A	V.1.m.2	11010
2	A	V.3.m.1	
3	D	V.3.m.1 V.3.m.2	
4	D	V.4.m.3	
5	C	V.4.III.3 II.1.m.1	
6	В	I.1.m.5	
7	C	V.3.m.3	
8	C	V.3.III.3 I.3.m.1	refer to the scoring rubric for this constructed-response item
9	 D	V.1.m.4	refer to the scoring rubbe for this constructed-response item
10	B C	V.1.m.3	
10			
12	С	V.1.m.2 V.1.m.3	refer to the cooring rubic for this constructed response item
	<u></u>		refer to the scoring rubric for this constructed-response item
13 14	C	III.3.m.1	
15	D B	I.1.m.5 III.5.3.1	
16		III.3.3.1 II.1.m.1	refer to the cooring rubic for this constructed response item
	 D	III.1.III.1 III.2.m.4	refer to the scoring rubric for this constructed-response item
17 18	В	III.2.III.4 III.2.m.4	
19	D B		
20		III.2.m.4 III.2.m.4	refer to the scoring rubric for this constructed-response item
20	 C	III.2.m.1	refer to the scoring rubbe for this constructed-response item
22		III.2.III.1 III.2.m.3	
23	D D		
23 24	В	III.3.m.1	
2 <del>4</del> 25	A	III.5.m.1 IV.4.m.4	
25 26	В	IV.4.III.4 II.1.m.1	
20 27	C D	IV.4.m.4	
28	D	I.1.m.2	refer to the scoring rubric for this constructed-response item
28 29	D	IV.4.m.2	refer to the scoring rubbe for this constructed-response item
30	D	I.1.m.5	
31	D	III.4.m.2	
32	D 	IV.4.m.2	refer to the scoring rubric for this constructed-response item
33	model item	ns not available	refer to the scoring rubble for this constructed-response tem
34		is not available	
35			
36			
37			
38			
39		is not available	
40		is not available	
40	D	IV.4.m.4	
41	C	IV.4.m.2	
42	A	IV.4.m.4	
43 44	A 	IV.4.m.4	refer to the scoring rubric for this constructed-response item
45	D	IV.1.m.1	Teres to the scoring rubble for this constructed-response item
<b>T</b> J	D	1 7 . 1 . 1111 . 1	

46 C IV.1.m.1	
47 D IV.1.m.1	
48 I.1.m.2 refer to the scoring rubric for this constructed-re	sponse item
49 C I.1.m.4	
50 A IV.2.m.1	
51 C IV.1.m.3	
52 B IV.1.m.6	
53 C IV.3.m.3	

<sup>\*</sup>Michigan Science Curriculum Framework, Summer 2000

### GRADE 8 MODEL TEST SCORING RUBRIC FOR CONSTRUCTED RESPONSE ITEMS

#### Item 8

**Scoring Points:** 

- 3 = student correctly interprets reading from all 3 instruments
- 2 = student correctly interprets reading from 2 of the instruments
- 1 = student correctly interprets reading from only one of the instruments
- 0 = student fails to provide any correct information

#### Item 12

**Scoring Points:** 

- 3 = student explains and lists 2 processes.
- 2 = student explains and lists one process OR student lists two processes.
- 1 = student explains only one process OR student lists only one process.
- 0 = student fails to provide any correct information

#### **Item 16**

**Scoring Points:** 

- 3 = student chooses hamster #1 and explains at least 2 traits for survival
- 2 = student chooses hamster #1 and explains 1 trait for survival OR
  - student chooses hamster #1 and lists two traits without explaining
- 1 = student chooses hamster #1 but fails to explain any traits OR
  - student chooses hamster #2 and provides a reasonable explanation for why
- 0 = student chooses hamster #2 with an inappropriate explanation

#### Item 20

#### **Scoring Points:**

- 3 = student names 2 systems and describes a primary function of each
- 2 = student names 2 systems and describes a primary function of one
- 1 = student names 2 systems but fails to describe primary functions
- 0 = student names 1 system only with no description of function

## **Item 28** (Investigation item: 4 points in the **new** test) Scoring Points:

- 2 = complete procedures
- 1 = partial procedures
- 0 = incorrect information

#### Item 32 (Text Criticism item)

#### **Scoring Points:**

- 4 = student includes 2 aspects for each of the two explanations
- 3 = student includes only 1 aspect for one explanation and 2 aspects for the other
- 2 = student includes only 1 aspect in each explanation, OR 2 aspects in one of them
- 1 = student explains only 1 aspect of the four points
- 0 = student fails to provide any correct information

#### Item 44

### **Scoring Points:**

- 3 = student gives 3 correct and separate examples
- 2 = student gives 2 correct and separate examples
- 1 = student gives only 1 correct example
- 0 = student fails to provide any correct information

#### **Item 48**

### Scoring Points:

- 3 = student gives 3 correct reasons
- 2 = student gives 2 correct reasons
- 1 = student gives only 1 correct reason
- 0 = student fails to understand task